AMENDMENTS TO THE CLAIMS

1.   (Currently amended) A method comprising:

transmitting first digital messages to an analysis tool from a monitoring circuit integrated with a microprocessor, the first digital messages being representative of first specific events which depend on execution of an instruction sequence by the microprocessor;

detecting, with a request circuit, at least one second specific event independent from the execution of the instruction sequence by the microprocessor;

transmitting from the request circuit to the monitoring circuit through dedicated accesses, when the at least one second specific event is detected, a request signal indicating a request that a message associated with said at least one second specific event be transmitted to said analysis tool and a characteristic data signal associated with said at least one second specific event;

storing the characteristic data signal in the monitoring circuit, and, if resource management conditions are fulfilled, transmitting an acknowledgement signal from the monitoring circuit to the request circuit through a dedicated access, wherein the acknowledgement signal notifies the request circuit that the request has been granted ;

transmitting at least one second digital message representative of the stored characteristic data signal from said monitoring circuit to the analysis tool; and

processing the first digital messages and the at least one second digital message via the analysis tool to analyze operation of the microprocessor, including determining the instruction sequence executed by the microprocessor, and the at least one second specific event to determine at least one relationship between the instruction sequence and the at least one second specific event.

2.   (Previously presented)   The method of claim 1, in which the resource management conditions are fulfilled when the monitoring circuit is not transmitting the first digital messages representative of the first specific events.

3.   (Currently amended) The method of claim 1, in which the at least one second digital message representative of the stored characteristic data signal comprises an identifier

indicating that the at least one second digital message is relative to the at least one second specific event independent from the execution of the instruction sequence by the microprocessor, and the characteristic data signal.

4.   (Previously presented) The method of claim 1, in which the characteristic data signal corresponds to the values on input terminals of the microprocessor.

5.   (Currently amended) An apparatus, comprising:

a microprocessor;

a memory integrated with the microprocessor;

an analysis tool;

a monitoring circuit for transmitting first digital messages to the analysis tool, the first digital messages being representative of first specific events which depend on execution of an instruction sequence by the microprocessor; and

a request circuit for detecting at least one second specific event independent from the execution of the instruction sequence by the microprocessor, the request circuit transmitting to the monitoring circuit through dedicated accesses, when the at least one second specific event is detected, a request signal indicating a request that a message associated with said at least one second specific event be transmitted to said analysis tool and a characteristic data signal associated with said at least one second specific event,

wherein the monitoring circuit stores the characteristic data signal, if resource management conditions are fulfilled, transmits to the request circuit an acknowledgement signal when the characteristic data signal is stored, wherein the acknowledgement signal notifies the request circuit that the request has been granted, and transmits to the analysis tool at least one second digital message representative of said stored characteristic data signal, wherein the at least one second digital message comprises an identifier indicating that the at least one second digital message is relative to the at least one second specific event independent from the execution of the instruction sequence by the microprocessor, and the characteristic data signal, and

wherein the analysis tool processes the first digital messages and the at least one second digital message to analyze operation of the microprocessor, including determining the instruction sequence executed by the microprocessor, and the at least one second specific event <u>to determine at least one relationship between the instruction sequence and the at least one second specific event</u>.

6.   (Previously presented) The apparatus of claim 5, in which the request circuit, the monitoring circuit, and the microprocessor are integrated in a same chip.

7.   (Previously presented) The apparatus of claim 5, in which the request circuit is connected to input terminals of the microprocessor.